

from which it was derived, as they are seen in the pebbles, and pieces of quartz occur in the conglomerate.

At one place an irregular mass, and a sheet running along a joint, occur, composed of a fine-grained crystalline rock, apparently intrusive in the conglomerate. This rock is scarcely at all decomposed, but broken into small pieces in a manner similar to that produced by great pressure.

At its southern edge the conglomerate passes under the newer volcanic rock of the plains. At one place the volcanic rock appears to have flowed up an old valley in the conglomerate. The present creek has cut through it again, showing at one place the conglomerate at the bottom of the valley and on the ridge, but volcanic rocks remaining on both sides at intermediate levels.

The age of this conglomerate is doubtful. On the geological survey maps it is marked as oolitic, with a note that it is probably of the age of the mesozoic coal measures. Mr. Selwyn, in his "Geology of Victoria," speaking of the Upper Palæozoic rocks, mentions several localities in which conglomerates occur, including this one, and expresses an opinion that this and the more easterly ones are older than the western ones. The presence of the quartz veins, which do not occur in the Bacchus Marsh conglomerates, is also evidence in favour of greater age, though these may be only a local development. In the absence of any organic remains it would be difficult to refer this formation to any particular age.

The total difference of level of the highest and lowest places at which I observed this conglomerate is 760 feet. This cannot, however, be taken as representing its thickness, for though the sandstone, in which the bedding is plainest, appears to be horizontal, the coarse conglomerate would need a steep slope for its formation, and could accumulate on a considerable slope.

I have not been able to visit the more northern localities in which the conglomerate occurs, but it would be interesting to know their relation to this part and the levels at which they occur. A further examination of the whole formation is needed to determine the direction of the range from which it was derived and its relations to the other rocks, particularly the granite and trap rocks of the vicinity.

SOME TRANSFORMATIONS OF AUSTRALIAN LEPIDOPTERA.

BY JAMES LIDGETT.

THE present paper embraces the life-history of two species of Victorian moths, both of which are fairly numerous, although the former—*Mnesampela privata*—the most abundant, is difficult to procure; the latter—*Nyctimera amica*—being easily procured.

FAM. GEOMETRIDÆ.

MNESAMPELA PRIVATA.

Egg.—Dull white in colour; nearly ovate, flattened slightly on both sides. The mass contains from 50 to 60, agglutinated to the under side of the leaf. I have frequently found these eggs in May and June.

Larva (full grown).—A very handsome caterpillar, with the head small in comparison; has 18 pure white tubercular processes, and from the centre of these spring a small bunch of longish white hairs. Body segments mottled with angular black markings, so as nearly to obscure the ground colour, which is yellowish red. From the base of the second segment to the posterior margin of the eleventh run two somewhat broad subdorsal red lines, gradually fading where they touch the posterior part of each segment. On each of these two lines are two chalk-white tubercles, bearing each a fine white hair. Segments 2, 3, and 4 have each 12 tubercles, armed with long fine hairs, those of the subdorsal region being the longest—twice as long as the rest. Segments 5 to 10 have 10 tubercles, being placed so as to form a triangle, in the centre of which are placed the spiracles, which are black. On the sixth segment are two pure white eye-like subdorsal spots. Anal segment and claspers pale yellowish, feet and legs of a lighter tint. Length about $1\frac{1}{8}$ inch.

These grubs are well known to be gregarious, living in companies of from 10 to 15. They have a curious habit of drawing the tender shoots of the tree together by the aid of silken thread (produced by the larvæ) in conjunction with the gum of the tree, which forms their particular domicile. The young larvæ then put out threads to descend from branch to branch. They often cause much damage to a plantation of young gum trees, rarely feeding on them after the trees are about three years old. Their "domiciles" would attract the eye of the most casual observer.

Pupa.—Reddish brown in colour. Abdomen darker. The segmentation deep and prominently traced by a transverse band of darker brown. The head is largely produced in front. Mouth parts pitchy. Wing-covers smooth, distinctly showing the course of the nervures. Antennal cases highly elevated, transversely wrinkled, of a darker hue than the wing-covers; eye and tongue cases ample; abdomen tapering, terminating in a short, stiff seta. Each segment bears a transverse band of serrated teeth, radiating from the subdorsal region. Length about $\frac{9}{16}$ inch, breadth $\frac{3}{16}$ inch. I have not known this species to form a cocoon any more than a few silken threads, and it spends about four months in the pupa stage. Food plant, *Eucalyptus globulus*.

FAM. BOMBYCES.

NYCTIMERA AMICA. White.

Egg.—Globular, almost transparent; are deposited side by side in masses of 80 or 90, on the under part of leaf of food plant.

Larva (full grown).—Head black, shining; body velvety black, with three longitudinal lines (dorsal and subdorsal), deep orange or nearly red. Each segment bears six blue-back tubercles, from which spring bunches of hair. The second segment has two long tufts of hair projecting anteriorly beyond the head. Under side slate grey, feet pitchy black.

Pupa.—*Vide Victorian Naturalist*, vol. viii., No. 10 (H. Edwards).

Cocoon.—Spins a few silken threads together with the hairs of its own body; generally found under fallen leaves and other *débris*. Length, $1\frac{3}{4}$ inches.

Food Plant.—Among other plants I have noticed it very fond of English ivy.

Coloured drawings, illustrating the life-histories of these two insects, were exhibited by me, at this Club, on 14th September, 1891.

NOTES ON A TRIP TO SOUTH GIPPSLAND.

BY R. S. SUGARS.

(*Read before the Field Naturalists' Club of Victoria, 11th July, 1892.*)

I LEFT Melbourne on Thursday, 7th January last, by train from Prince's Bridge at 9.10 a.m., booked as far as the then terminus of the railway line, Leongatha. At Dandenong a transfer was made to the Great Southern line, from whence the journey can now be performed to Port Albert without a break, the railway line since having been opened to that point.

One of my fellow-travellers proved to be a farmer in the Bass district, and during our conversation the Field Naturalists' Club happened to be mentioned. Learning that I was a member, he turned to the subject of the proposed Gun License Act at once, and informed me that he quite agreed with the proceedings of the Club, except on that point, adding that it would be most unfair to deprive a farmer of the use of his gun, or compel him to pay for it, for the destruction of vermin, &c. I explained to him that should such an Act be passed it would in all probability follow the lines of the English Act, as far as applicable to the colony, and that the English Act permitted every farmer the free use of his gun on his own farm for the purpose of destroying vermin, &c.

Leongatha was reached at 2.10 p.m., and payment of 5s. secured a seat in the railway contractor's truck as far as Foster. I might add that the return journey from Toora by Victorian Railways only cost 3s. 11d. Having some cumbersome luggage